

Proposal Identification	08_0081			
Project Title	[CII] line emission as an indicator for dynamical molecular cloud formation in Taurus			
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Observations				
Mission Identification	2021-02_19_GR_Hogan_F700, 2021_02_23_Hazel_F701, 2021_03_12_Harriet_F711			
Flight date	2021 February 19 and 23, March 12			
GREAT configuration	front-ends: LFA, HFA		back-ends: 4GFFT spectrometers	
Astronomical Sources	L1536-edge-1, L1536-edge-2	Scan	36890 – 36918, 36767 – 36785, 37977 – 37997.	lines: CII, OI
Calibrated data products based on: kosma_calibrator ver. “conversion_to_git-157-g01cefdd”, GILDAS software ver. Aug20a				
product level	file name	description		
3	Cycle8_GR_OT_08_0081_Walch_Ta.great Cycle8_GR_OT_08_0081_Walch_Tmb.great	Calibrated to $T_A^*$ scale ( $\eta_f = 0.97$ ). Calibrated to $T_{mb}$ scale with: $\eta_{mb}$ (LFAH) = (0.66, 0.64, 0.67, 0.69, 0.65, 0.66, 0.68); $\eta_{mb}$ (LFAV) = (0.63, 0.64, 0.66, 0.63, 0.64, 0.64, 0.65); $\eta_{mb}$ (HFA) = (0.65, 0.66, 0.69, 0.69, 0.70, 0.65, 0.70); The main beam temperature data file has been created with the script “Convert-Tant-to-Tmb.class” All scans have been quality validated.		
4	L1536-edge-1_CII.great L1536-edge-2_CII.great L1536-edge-1_OI.great L1536-edge-2_OI.great	Created with: Cycle8_GR_OT_08_0081_Walch.class 1 <sup>st</sup> order spectral baseline removed. Average for each position in the sky. Dropped pixels with Problematic Receiver response.		

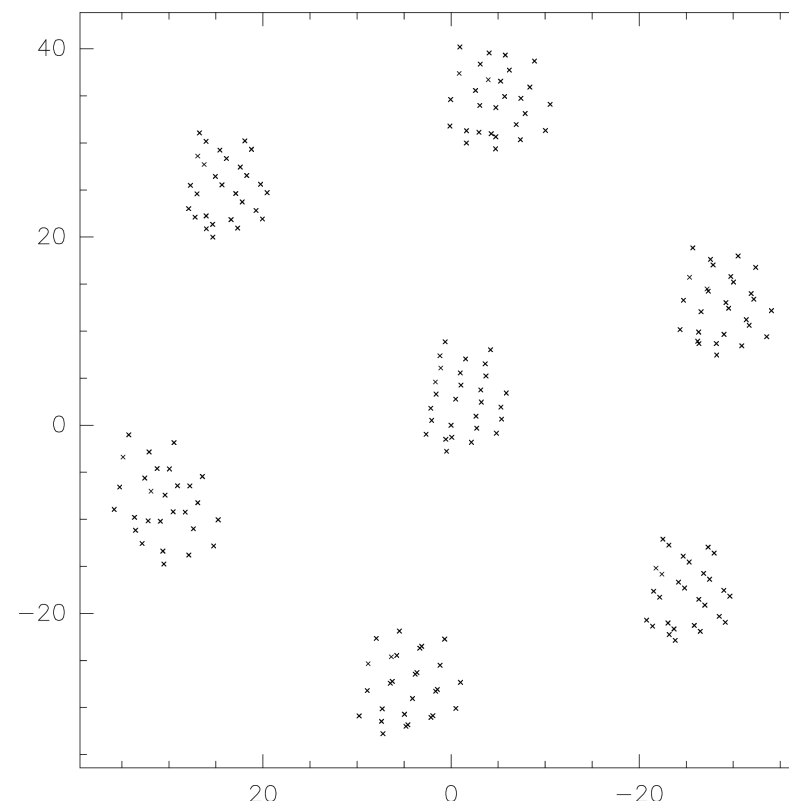
Notes: (1) Heyminck, S. et al.: GREAT: the SOFIA high-frequency heterodyne instrument. Astron.Astrophys. 542, L1 (2012)

(2) Guan, X. et al.: GREAT/SOFIA atmospheric calibration. Astron.Astrophys. 542, L4 (2012)

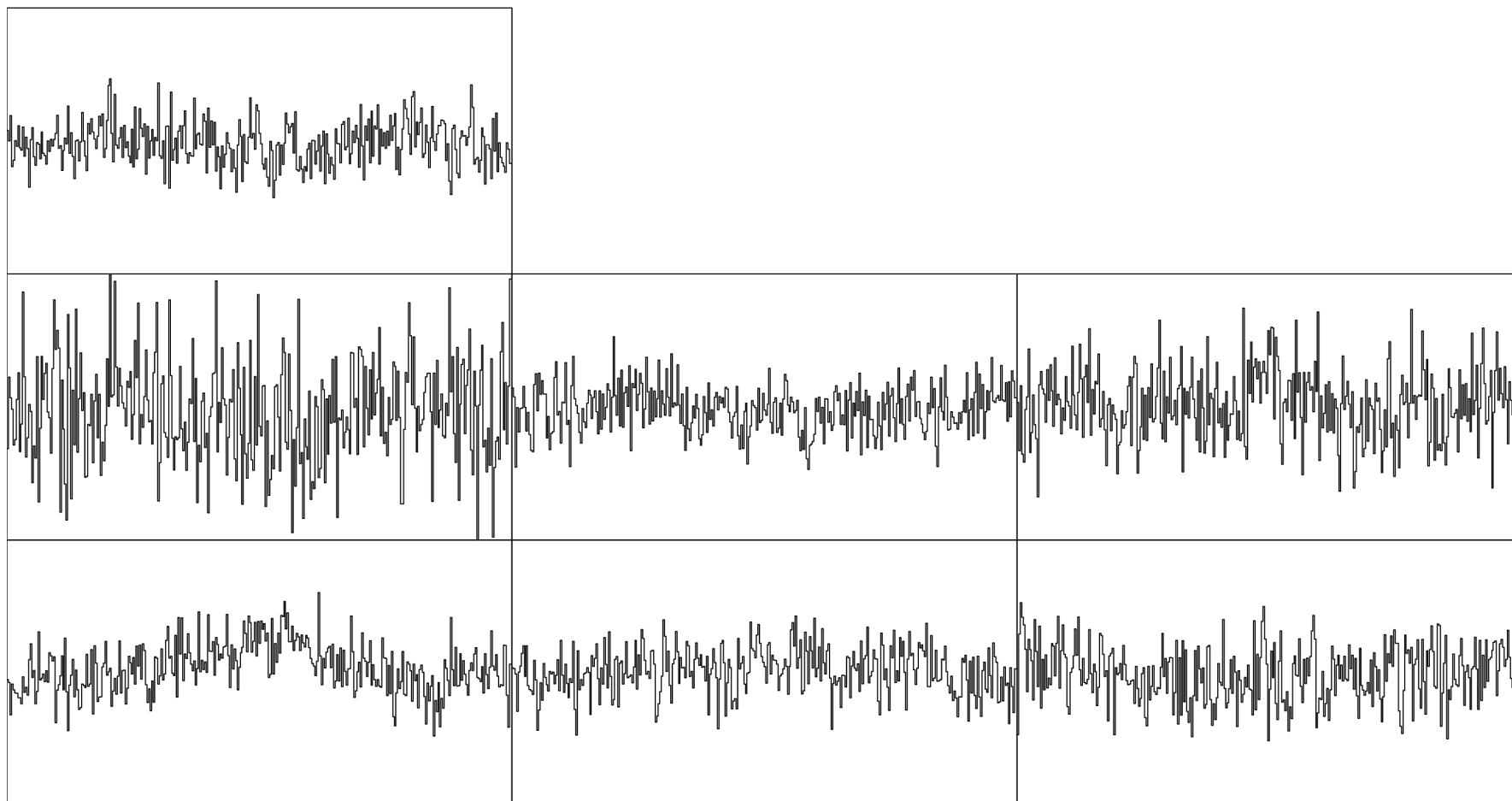
- (3) Risacher, C. et al.: First Supra-THz Heterodyne Array Receivers for Astronomy with the SOFIA Observatory. IEEE Trans.TST 6,199 (2016)
- (4) Risacher, C. et al.: The upGREAT 1.9 THz multi-pixel high resolution spectrometer for the SOFIA Observatory, Astron.Astrophys. 595, 34 (2016)
- (5) Durán et al., IEEE Transactions on Terahertz Science and Technology, vol. 11, issue 2, pp. 194-204

L1536-edge-1 CII:

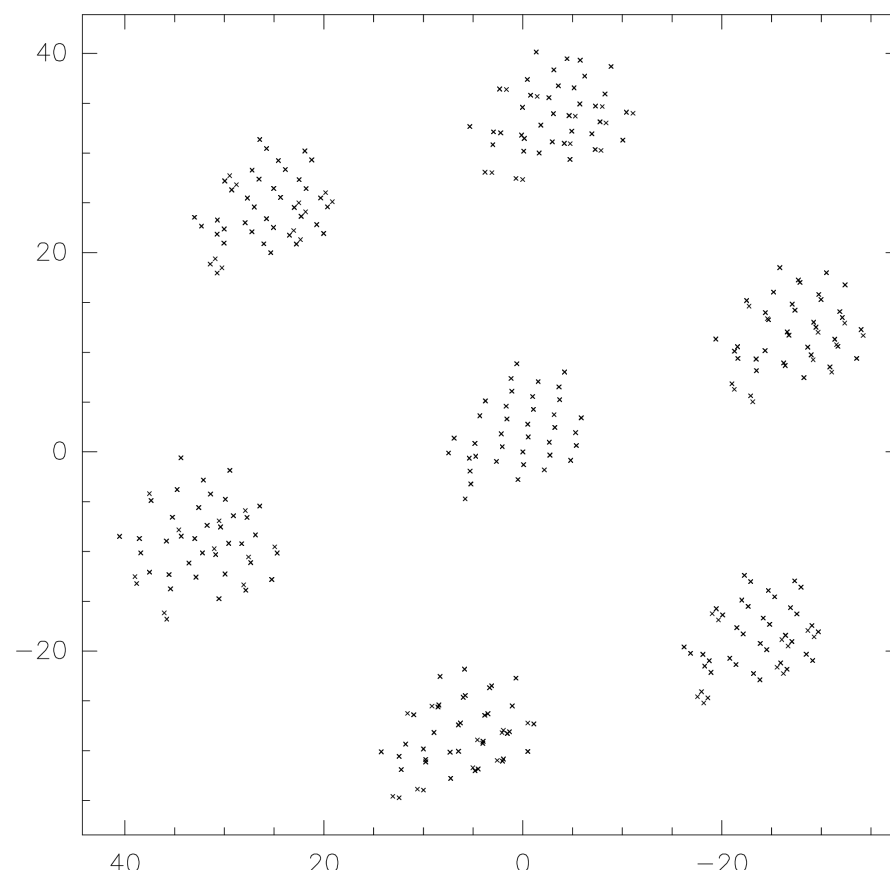
The pointing correspond to the positions showed in the figure:



The following plot shows the average spectra. Tentative detection in CII.



For L1536-edge-2 CII:



Average spectra per pixel in CII. Detection of CII.

